

Claims

- [c1] 1.A rotating electrical machine comprising an armature having a circular core of a magnetic material and a plurality of magnetic pole teeth extending radially from said circular core for cooperation with a plurality of circumferentially spaced permanent magnets, each of said magnetic pole teeth defining a core of generally rectangular cross section with slots formed between circumferentially adjacent pole teeth, an insulator having channel shaped portions covering at least in part said cores of said magnetic pole teeth, said channel shaped portions being comprised of radially extending slot portions extending along the sides of the pole teeth facing the slots and integrally joined by an axial portion extending across an axial outermost side of said pole teeth, said axial portion of said insulator channel shaped portions having a thickness greater than that of said side portions to avoid thinning at the juncture therebetween, coil windings wound around said cores of said magnetic pole teeth with said insulator being interposed therebetween.
- [c2] 2.A rotating electrical machine as set forth in claim 1 wherein the thickness of the axial portion of said insulator channel shaped portions varies along its radial position.
- [c3] 3.A rotating electrical machine as set forth in claim 2 wherein the thickness of the axial portion of said insulator channel shaped portions is greatest adjacent the outer ends of the pole teeth.
- [c4] 4.A rotating electrical machine as set forth in claim 3 wherein the thickness of the axial portion of said insulator channel shaped portions decreases gradually toward the circular core.
- [c5] 5.A rotating electrical machine as set forth in claim 1 wherein the axial portion of said insulator channel shaped portions are curved.
- [c6] 6.A rotating electrical machine as set forth in claim 5 wherein the thickness of the axial portion of said insulator channel shaped portions varies along its radial position.
- [c7] 7.A rotating electrical machine as set forth in claim 6 wherein the thickness of

the axial portion of said insulator channel shaped portions is greatest adjacent the outer ends of the pole teeth.

[c8] 8.A rotating electrical machine as set forth in claim 7 wherein the thickness of the axial portion of said insulator channel shaped portions decreases gradually toward the circular core.

[c9] 9.A rotating electrical machine as set forth in claim 1 wherein the diameter of the wire of the coil windings is not less than 1 mm.

[c10] 10.A rotating electrical machine as set forth in claim 1 wherein the core is formed by a plurality of laminated plates and the channel shaped portions of the insulator surround at least the axial outermost of said laminations.

[c11] 11.A rotating electrical machine as set forth in claim 10 wherein each of the magnetic pole teeth define an enlargement at the terminal ends of the cores to define a narrow mouth opening into the slots and the insulator axially extending protruding end portions surround the pole teeth enlargements.